Gender Differences in Mutual-Help Attendance One Year After Treatment: Swedish and U.S. Samples*

JANE WITBRODT, M.P.H.,† AND ANDERS ROMELSJO, M.D., PH.D.†

Alcohol Research Group, 6475 Christie Avenue, Suite 400, Emeryville, California 94608-1010

ABSTRACT. Objective: In the United States, many people turn to Alcoholics Anonymous (AA) and other mutual-help groups as a first source of help for an alcohol or drug problem, whereas others are introduced to AA while in treatment. Because AA and similar groups in the United States add to the treatment system and function without governmental funds, they represent an important element in ongoing care for individuals with substance-use disorders in the health care system. In countries with free (or more affordable) and more comprehensive systems of care, their role is less clearly defined. **Method:** In this study, we compared men and women from representative treatment samples from studies with parallel designs, one Swedish (n = 1,525) and the other American (n = 926), to explore whether rates and correlates of attendance at 1-year follow-up (63% and 78% followed) differ by gender. We explore individual characteristics (demographic, severity, motivational) and formal and informal influences (treatment, mutual help, coercive, social) as possible help-seeking correlates of attendance. **Results:** In both countries, similar proportions of men and women attended mutual-help groups. However, twice as many U.S. clients reported attendance. Moreover, twice as many U.S. clients set abstinence as a treatment goal. In multivariate models, having an abstinence goal, a perceived need for treatment, suggestions from one's employment environment, and prior mutual-help attendance predicted posttreatment attendance for men and women in both countries. Gender differences were also found. **Conclusions:** Given the stages in which individuals seek care and the cyclical nature of relapse and recovery, mutual-help groups are an efficient resource in the continuum of services. (*J. Stud. Alcohol Drugs, 71,* 125-135, 2010)

HISTORICAL ROOTS for the 12-step and other mutual-help fellowships we know currently in the United States began with Alcoholics Anonymous (AA), which was founded in 1935 and drew heavily from Oxford Group ideologies. The Oxford Group, started by an American Christian missionary in England in the early 1900s, was an international evangelical movement that grew into a well-known informal network of people by the 1930s. Although AA membership as a whole has become heterogeneous across time (Kurtz, 1993; McCrady, 1998; Tonigan et al., 1996), the early membership of AA was comprised primarily of middle-class White men (Trice and Roman, 1970), with women at the time experiencing substantially higher degrees of stigma for their drinking than men (Kaskutas et al., 2008; Mäkelä et al., 1996). AA maintained a steady growth in membership starting in the 1960s in the United States (Room, 1993), with membership growth steepest in the 1970s and 1980s when professional treatment programs began to proliferate. This occurred just after federal legislation led to the establishment of the National Institute on Alcohol Abuse and Alcoholism in 1970, opening public funding for treatment and stimulating growth in private treatment programs (Weisner and Morgan, 1992). These programs often suggested that clients go to AA (or similar groups) after leaving treatment. AA in the United States grew from 100 members in 1940 to 478,000 members in 1980 and 1,213,000 members in 2007 (Weisner et al., 1995). Today, AA members attend meetings hosted by 53,665 registered U.S. groups (General Service Office, 2007). Since its inception, AA has become the prototype for numerous parallel groups in the United States (e.g., Narcotics Anonymous [NA]), and it has spread internationally to more than 50 countries (Alcoholics Anonymous, 2008).

One phenomenon seems to have changed over the years. Compared with the estimated number of problem drinkers in the U.S. general population and in the U.S. clinical populations seeking treatment, women (relative to men) appear to be overrepresented in AA by approximately 10%-20%, according to an earlier international study (Mäkelä, 1993). Furthermore, AA is used increasingly as an adjunct to treatment or as aftercare (Magura, 2007) and often with the explicit goal of providing the problem drinking man or woman with an ongoing nondrinking community (Institute of Medicine, 1990). The ubiquity of groups in the United States makes them a likely first place many substance-dependent individuals turn to for help (Substance Abuse and Mental Health Services Administration and Office of Applied Studies, 2008), although the pathway into these groups is often through formal treatment programs (Magura, 2007). Indeed, the incorporation of AA into almost all treatment programs in the United States today (National Treatment Center Study,

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†Correspondence may be sent to Jane Witbrodt at the above address or via email at: jwitbrodt@arg.org. Anders Romelsjo is with the Department of Public Health Sciences, Karolinska Institute, Stockholm, Sweden, and was previously at the Centre for Alcohol and Drug Research (SoRAD), Stockholm University, Stockholm, Sweden.

2005) indicates a strong endorsement by professionals to the disease concept of dependence and to abstinence as the preferred goal of treatment (Weisner and Morgan, 1992), an approach apparently not as widely adopted internationally (Mäkelä et al., 1996, p. 186). Because AA and other mutual-help groups in the United States augment the formal treatment system without additional governmental funds, they represent an important element of ongoing care for substance-use problems. Because research on AA has been dominated largely by North American perspectives (Mäkelä, 1993), comparatively less is known about how AA has been integrated into the continuum of care in countries with different patterns and perceptions of problem use and different systems for providing services. Sweden is a good example of one such country.

Sweden's history with AA groups began in the 1950s, when the first group was formed in Stockholm 8 years after the Swedish Links, the dominant local mutual-help group at the time (Kurube, 1992a). The Swedish Links movement was also ideologically influenced first by the Oxford Group and then later by the U.S. AA movement, which is reflected in their seven-point program that overlays with AA's steps. Unlike AA, the spiritual components are absent. As with AA, the Swedish Links is based on mutual support and the belief that alcoholism is a progressive and irreversible disease (Kurube, 1998) that some are predisposed to and that the only way to recover is to abstain from drinking (Kurube, 1992b). The Swedish Links remains a viable mutual-help organization in Sweden. From a scant literature, the most current estimate shows that the Swedish Links is comprised of about 270 societies grouped within seven different Swedish Links organizations (Kurube, 1992b). The current membership estimate is more than 16,000, and about three fourths of that membership are men (Socialstyrelsen, 2003).

In Sweden, AA groups and membership increased most dramatically during the 1980s when institutional 12-step treatment programs, such as the Minnesota Model treatment programs, were introduced to several Nordic countries (Stenius, 1991). This occurred on a large scale when the Swedish Council on Alcoholism and Addiction was founded in 1983, and it endorsed the Minnesota Model treatment program at a time when new models of treatment were being sought and public funding was not a problem (Bergmark, 1998). At first, these Minnesota Model programs were generally small private units, with most clients fees paid for by the local municipalities. Over 10 years, these programs comprised 23% of all inpatient beds and a substantial portion of outpatient treatment. Similar to the U.S. programs, these programs introduced clients to the 12 steps of recovery while they were in treatment and encouraged them to attend AA groups after leaving treatment. Between 1980 and 1990, the number of AA groups in Sweden increased from 23 to 278. Currently, more than 400 AA groups, generating approximately 1,140 weekly meetings, are available in Sweden (AA Sweden; see www.aa.se), a country with a population about one-thirtieth the size of the U.S. general population. Actual AA membership numbers could not be found for Sweden. However, compared with the current U.S. membership (more than 1,213,000), AA groups outside the United States and Canada number 700,000 (General Service Office, 2007). As in the United States, Swedish women appear to be overrepresented relative to the number of female problem drinkers in the general population and women in professional treatment programs by about 10%-15% (Mäkelä et al., 1996).

Although formal institutional 12-step treatment (i.e., programs such as the Minnesota Model treatment that are philosophically founded on the 12 steps of AA) has been the dominant pathway to AA in Sweden, unlike the U.S. treatment system, fewer AA members serve as staff in treatment programs systemwide (Mäkelä et al., 1996; National Treatment Center Study, 2005). Although a 12-step influence is present in many programs and staff regard outside 12-step groups as a viable resource, Sweden's treatment programs and ideologies are diverse. Unlike in the United States, the majority of treatment providers in Sweden has not wholly endorsed the disease concept (Bergmark, 1998). Although clients' drinking is addressed and abstinence, generally, is promoted, alcohol problems are viewed as mainly a social problem, and treatment is focused more broadly on integrating the problem drinker back into society by assisting with housing, employment, and other social service needs as part of treatment.

Why the interest in AA and other mutual-help groups? Although early studies with less rigorous research methodologies found mixed results (Emrick et al., 1993; Kelly, 2003; Tonigan et al., 1996), accumulating research evidence from U.S. studies suggests that ongoing participation in mutual-help groups (as defined variously by attendance or affiliative behaviors) is associated with better outcomes. These results are reported in well-documented randomized clinical trials that recruited treatment clients from both public and private programs (Ouimette et al., 1998; Project MATCH Research Group, 1998; Timko and Debenedetti, 2007; Witbrodt et al., 2007). However, only limited mutual-help research has focused on gender differences, and among the few studies conducted, findings are mixed (again, methodological rigor needs to be considered [Alford, 1980; Bodin, 2006; Del Boca and Mattson, 2001; Humphreys et al., 1991; Kingree, 1997; Moos and Moos, 2006; Moos et al., 1990; Timko et al., 2002]).

In this study, we used data from two treatment studies with parallel research designs—one Swedish and one American—that collected comparable background and help-seeking data at baseline and at 1-year follow-up. For each sample, we tested whether men's and women's rates of mutual-help group attendance differed and whether particular help-seeking factors were differentially associated with posttreatment mutual-help group attendance. A side-by-side

cross-cultural analysis allowed us to see how two countries with distinct historical perspectives and systems for providing care compared on mutual-help group attendance and help-seeking measures. Furthermore, to help frame our conclusions, we describe client differences (and similarities) in the two samples at treatment initiation.

Method

Study sites, sampling methodology, and participants

Swedish sample. The Swedish sample was recruited from Stockholm County, Sweden's most populous county, which contains one fifth of the Swedish population (1.8 million) and thus provides a good representation of the Swedish population. To reach a representative sample of the population seeking services for alcohol and drug problems in the county, clients were recruited in each of two systems offering substance-use services: the health-based system and the social welfare-based system (Room et al., 2006). Each system serves an approximately equal share of all clients seeking specialized treatment for abuse and dependence on any day. All treatment is publicly financed and free or very affordable for everyone. The health-based system is responsible primarily for detoxification and acute health complications from dependence, and the social-welfare system is responsible for providing adequate alcohol and drug treatment to the population as a whole.

Nine inpatient units (primarily detoxification) and 11 outpatient units served as recruitment sites in the health care system. Six suburban municipalities and four districts of Stockholm City, and an additional four municipalities in northwest Stockholm County, provided recruitment sites for the social-welfare system. Outpatient treatment in this system is provided either (a) in units wherein substance-use problems, as well as welfare support or child-welfare issues, are handled; or (b) in specialized treatment units. Some of them also offer adjunctive services for psychotherapy, outreach work, work therapy, supported housing, or training for daily living for individuals with substance-use disorders. The total sample, which consisted of 1,865 clients from the two delivery systems, was interviewed between 2000 and 2002. For comparability with U.S. data, we dropped Swedish clients recruited from methadone treatment, medication treatment (prescription drug dependence), and drug detoxification sites from these analyses. We report here on a baseline sample of n = 1,525 (43% females). Among these clients, 964 were interviewed at 1 year (63% follow-up rate; this somewhat lower rate needs to be considered when interpreting results).

U.S. sample. The U.S. sample was recruited from a single northern California county. The county represents a socially and culturally diverse population (approximately 900,000), with a mix of both rural and urban areas and high generalizability to other parts of the United States (Weisner and Schmidt, 1995). Public and private treatment programs in the county—whose focus was not primarily drug dependence (i.e., methadone programs were excluded), had a least one intake per week, and were the first-line treatment entry (e.g., aftercare programs were excluded)—participated in the study. These programs served both insured (mostly through one's employer) and uninsured (mostly unemployed or employed with insufficient health care benefits) clients.

Study programs included two health maintenance organizations (or HMOs) offering long-term outpatient treatment; two private hospital programs offering short-term detoxification and inpatient treatment, as well as lengthier day treatment and outpatient programs; and six public system programs consisting of two detoxification sites, two inpatient programs (gender specific), and two outpatient programs. These programs primarily followed either the Minnesota Model philosophy that dominates the U.S. treatment philosophy (Institute of Medicine, 1990), or a social-model treatment philosophy (Borkman et al., 1998; Kaskutas et al., 1999) that tends to be community-based and closely follows the 12 steps and traditions of AA. The total sample, which consisted of 926 clients from the 10 programs (38% females), was interviewed between the years 1995 and 1996. The 1-year follow-up rate was 78% (n = 722) among those who consented at baseline to be interviewed at follow-up.

In both samples, consenting clients were recruited from consecutive treatment admissions within the first 3 days of treatment. In-person baseline interviews were completed by trained interviewers, who were independent of the treatment programs. Follow-up interviews were conducted primarily by telephone, with a few completed in person. In both studies, weights were constructed such that the recruited sample was adjusted to be representative of the client flow in the treatment systems as a whole (Kaskutas et al., 1997a; Room et al., 2006). *N*s reported here are unweighted; statistical results are weighted.

Baseline and outcome measures

A number of baseline measures were chosen to first compare men with women within each sample at treatment initiation. Next, we used a subset of these baseline measures to test whether selected help-seeking factors differentially affected their mutual-help attendance in the 1-year posttreatment period. Our selection of factors was guided by those identified in previous help-seeking research with treatment samples (Bodin, 2006; Grant, 1996; Hasin and Grant, 1995; Kaskutas et al., 1997b; Koski-Jännes, 1991; Longabaugh et al., 2005; Morgenstern et al., 2002; Timko et al., 2002; Weisner, 1993; Weisner and Matzger, 2002).

Individual characteristics. Our demographic measures included age, marital status (married/cohabitating vs. else), living with children 18 years of age or younger (yes vs.

no), and educational status. For comparability, educational categories for the Swedish sample were grouped as (a) elementary through some gymnasium (sixth form/senior high school), (b) 3-year gymnasium, or (c) any postgymnasium studies. For the U.S. sample, these were grouped as (a) less than high school, (b) graduated from high school or received a general equivalency diploma (or GED), or (c) any college or graduated from technical school training.

Addiction Severity Indices (ASI) were used to assess past-30-day alcohol, drug, psychiatric, family/social, legal, and medical problem severity (McLellan et al., 1992). ASI composite scores use key items to produce a continuous composite score for each domain (0-1, with higher scores designating a greater severity). Additionally, we used a single measure to assess "perceived need for help" by recoding questions from the two alcohol and drug indices, "How important to you is treatment for these (alcohol/drug) problems?" The four possible response categories were recoded as extremely versus else. (Answering extremely to either [or both] was coded as 1 and else as 0.) We chose this item because it has been a significant predictor of help seeking in alcohol and treatment samples (Shen et al., 2000; Weisner et al., 2001). Although several studies (but not all) have shown the ASI to be a reliable and valid instrument (Mäkelä, 2004; McLellan et al., 1985), the self-perceived need for treatment item has not been tested as a valid measure of need or motivation (Shen et al., 2000).

We used another baseline question to assess intent. This measure, which asked about one's goal for drinking, used a slightly different root question and slightly different response categories in the two studies. The Swedish sample was asked, "Which of the following best describes what you want from treatment, in terms of your drinking…." The U.S. sample was asked, "Ideally, what if anything, would you like to do about your use of alcohol…." Response categories in both studies ranged from stop completely to cut down to do nothing. For comparability, these response categories were dichotomized (stop completely vs. else). Also, we chose the two-category response, because it is ideologically consistent with the dominating mutual-help organizations represented in both studies, that is, AA, NA, Cocaine Anonymous (CA), and the Swedish Links.

Both studies used a checklist of symptoms to diagnose alcohol and drug dependence. For the Swedish sample, this included the 10-item measures of the International Classification of Diseases-Tenth Revision (ICD-10; World Health Organization, 1992). For the U.S. sample, this included the Diagnostic Interview Schedule for Psychoactive Substance Dependence from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000). Both the ICD-10 and the DSM-IV are psychometrically robust, perform equally well in determining substance dependence, and have minimal differences (Hasin et al., 2006; Saunders, 2006). Because persons could be alcohol and/or drug dependent, we also recoded these measures as "alcohol and drug dependent" versus "else" for models testing help-seeking correlates of mutual-help attendance.

Formal influences. We created a dichotomized baseline measure for involvement in any formal alcohol and drug treatment services (yes vs. no) in the year before entering the study using the various types of specialized treatment programs available to clients in the two studies. At the baseline interview, both studies also asked questions about formal and informal sources of suggestions (measures of mild coercion) to seek the current treatment. We recoded these multiple sources into four summary groups (three for formal sources and one for informal sources). Suggestions from the three formal sources could have come from the employment environment (e.g., employer, supervisor, employee assistance program, or co-worker), from health and human service agencies (e.g., doctor or other medical care, and psychiatric, social welfare, or formal substance-use treatment services), or from legal sources (e.g., lawyer, judge, or probation officer).

Informal influences. The fourth source for treatment suggestions could have come from informal sources, that is, persons in one's social network (e.g., partner, family, and friends). Both studies also asked clients about the magnitude of informal social network support available, that is, the number of people available to talk to about most things. These questions are from the Social Network Assessment (Kaskutas, 1995).

At baseline, the clients were asked about their lifetime and past 12-month mutual-help group attendance. Mutual-help group attendance for the Swedish sample was generated from a single question that asked about AA, NA, the Swedish Links, and "other" similar groups. In the U.S. sample, it was generated from separate queries for AA, NA or CA, and any "other" mutual-help group. To obtain consistency with the Swedish data, this was recoded into a single measure (attended vs. not).

One-year follow-up attendance (*dependent variable*). At follow-up, clients were asked about their mutual-help group attendance between baseline and the 1-year interview, not counting their baseline treatment. In addition to looking at rates of attendance, we used this 1-year follow-up measure as our dependent variable to test associations between attendance (coded attended vs. not) and selected help-seeking covariates, namely, individual characteristics (marital status, live with children, psychiatric severity, perceived treatment need, drinking goal, and dependence), formal influences (prior treatment; suggestions from employment, health/human, and legal sources), and informal influences (suggestions from friends/family, social network size, and prior mutual help).

Data analysis

Statistical analyses were completed separately for the Swedish and U.S. samples using sample-specific weights. Baseline differences between men and women were tested using one-way analysis of variance (continuous variables) and Pearson chi-square tests (categorical variables). These comparisons allowed us not only to test for gender differences within each sample but also to describe how the two samples compared at treatment initiation.

Rates of follow-up attendance. A two-step approach was used to examine gender differences in rates of mutual-help group attendance following treatment. We first used bivariate tests (Pearson chi-square) to compare rates by gender, and then we tested a multivariate logistic regression model (one for each sample) predicting attendance (follow-up), with gender as a covariate and controlling for those baseline differences that varied by gender in the bivariate tests.

Covariates associated with attendance. To test whether selected baseline help-seeking measures were associated with mutual-help attendance following treatment, we first used correlation coefficient analyses to examine the strength and direction of relationships between our various help-seeking correlates and to check for multicollinearity among the various measures. In these analyses, we found that ASI alcohol severity and alcohol dependence were highly correlated ($R^2 \geq .63$ in both samples), as were ASI drug severity and drug dependence ($R^2 \geq .70$ in both samples). Thus, we chose to use the substance-dependence measures and drop the ASI measures in remaining tests. In addition, lifetime and past-year formal treatment and lifetime and past-year mutual-help measures were highly correlated in both samples ($R^2 \geq .61$). Therefore, we only included the lifetime measures in multivariate models (all other correlations were small to moderate in magnitude). We then regressed mutual-help group attendance (reported at follow-up) on each baseline help-seeking correlate, adding an interaction term for gender by help-seeking correlate into each separate regression equation. Lastly, a simultaneous logistic regression model (one for each sample) was estimated using significant ($p \leq .10$) help-seeking predictor variables detected in the prior step. We entered these as three blocks so that the contribution of each set of help-seeking measures (individual, formal, and informal) could be estimated (R^2).

Results

Gender differences at baseline

Swedish sample. Although of similar age (the majority were ≥43 years old), men and women in the Stockholm County sample were statistically different on other demographic characteristics at baseline (Table 1). More women had attained higher education than men (26% vs. 15% had postgymnasium studies or higher); women were more likely to have nonadult children living with them (24% vs. 12%); and, although rates for being married/cohabitating were low for both genders, women (30%) were more likely to be in a relationship than men (20%). Although both women and men were dependent primarily on alcohol (62% and 59%) and fewer were dependent on drugs (32% for both genders), women were more likely than men to be dependent on both alcohol and drugs (15% vs. 10%). We found gender differences in four other ASI domains. Women reported higher composite scores than men on ASI family/social (.232 vs. .175), ASI psychiatric (.261 vs. .212), and ASI medical (.338 vs. .300, $p \leq .10$) domains; men scored higher on the ASI legal domain (.113 vs. .061).

Both genders had sought prior lifetime treatment at similar rates (62% for men and 66% for women). Men and women similarly received suggestions to consider treatment for their substance-use problem from family, friends, and acquaintances (33% and 29%) and from health and social-welfare service providers (62% and 63%). Men were more likely than women to receive suggestions from an employer or coworker (14% vs. 9%) and from someone in the legal system (14% vs. 7%), although these rates were low for both genders. About two thirds set a drinking goal to something other than stopping completely.

U.S. sample. As in the Swedish sample, men and women in the U.S. sample were of similar age (the majority <50 years of age), women were more likely to be in a relationship (70% vs. 61%), and women were more likely to be living with nonadult children (42% vs. 23%). U.S. women reported statistically higher composite scores on ASI family/social (.355 vs. .241), ASI medical (.323 vs. .261), and ASI psychiatric (.444 vs. .364) domains, and men reported higher ASI legal composite scores (.145 vs. .123, $p \leq .10$).

Rates for alcohol- or drug-dependence diagnoses were similar for both genders (about 50%, with alcohol dependence only slightly higher in both genders), but men were somewhat more likely to be dependent on both substances (28% vs. 22%). Men reported more prior lifetime treatment (76% vs. 59%). Except for suggestions from family, friends, and acquaintances (men received 10% more), suggestions to seek treatment for a substance-use problem from other sources were similar for both genders. Most men and women in the U.S. sample set a drinking goal to stop completely (74%).

Gender differences in mutual-help group attendance following treatment: Swedish and U.S. samples

Swedish men and women reported attending mutual-help groups (Table 1) at similar lifetime rates (60% and 58%, respectively), as did both men and women in the U.S. sample (88% and 86%). No gender differences emerged for attendance in the period following treatment in either sample.

Table 1. Baseline characteristics of men and women initiating treatment in the Swedish and U.S. samples

	Swedish sample			U.S. sample			
Variable	M	F	Total	M	F	Total	
(*n*)	(1,123)	(402)	(1,525)	(566)	(360)	(926)	
Age, mean	44	43	43	39	38	39	
Age, %							
18-34	24	26	25	36	40	37	
35-49	40	42	40	50	48	49	
≥50	36	32	35	14	12	13	
Married/cohabitation, %	**20**	**30*****	23	**29**	**33****	30	√
Live with nonadult children, %	**12**	**24*****	16	**23**	**42*****	29	√
Education, %							
<3 year gymnasium/<high school	**38**	**35*****	37	24	20	22	
3 year gymnasium/high school/GED	**47**	**40**	45	50	53	51	
Postgymnasium/>high school	**15**	**26**	18	27	27	27	
ASI alcohol, mean	.3740	.3788	.3753	.3783	.3548	.3702	
ASI drug, mean	.0778	.0738	.0767	.1318	.1256	.1297	
ASI psychiatric, mean	**.2116**	**.2609*****	.2253	**.3642**	**.4436*****	.3914	√
ASI family/social, mean	**.1752**	**.2321*****	.1911	**.2405**	**.3552*****	.2800	
ASI legal, mean	**.1126**	**.0605*****	.0980	*.1449*	*.1228*†	.1373	
ASI medical, mean	*.3000*	*.3379*†	.3106	**.2610**	**.3229***	.2822	
Perceived need extreme, %	39	41	40	60	65	62	√
Drinking goal to stop completely, %	38	36	37	73	77	74	√
Alcohol dependent, %	59	62	60	56	53	55	
Drug dependent, %	32	32	32	53	48	51	
Both alcohol and drug dependent	**10**	**15****	11	**28**	**22***	26	√
Formal treatment, lifetime, %	85	86	86	**76**	**59*****	**71**	√
Formal treatment, past 12 mo., %	62	66	63	45	41	43	
Employment setting suggestions, %	**14**	**9****	13	6	7	7	√
Legal system suggestions, %	**14**	**7*****	12	6	6	6	√
Health/human service suggestions, %	62	63	62	17	15	16	√
No. supportive persons in network, mean	3.7	3.2	3.5	5.0	4.0	4.6	√
Family and friend suggestions, %	64	65	64	**52**	**42****	48	√
Attended mutual help, lifetime, %	60	58	60	**88**	**86**	87	√
Attended mutual help, past year, %	29	32	30	**73**	**64****	70	

Notes: Chi-square and analyses of variance were used to test differences by gender (M = males, F = females), disaggregated by sample. √ indicates the measure was tested as a help-seeking correlate (independent variable) of mutual-help attendance following treatment (dependent variable). **Bold** indicates statistical significance. *Italics* indicates statistical significance approached $p < .05$. GED = general equivalency diploma; ASI = Addiction Severity Index; mo. = month.
†$p \leq .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

However, rates were more than twice as high for U.S. men and women (72% for both genders), compared with Swedish men and women (32% and 37%, respectively; results not shown). Multivariate tests that controlled for baseline gender differences supported these bivariate findings; that is, no gender differences in 1-year attendance were found in either sample (results not shown).

Correlates of mutual-help attendance at 1-year follow-up

Only baseline measures that were associated ($p \leq .10$) with mutual-help group attendance at follow-up in our first-step logistic regression models were included in our second-step simultaneous regression models. Interaction terms were included in the multivariate models only if effects of the covariates varied by gender in the first-step models. We also added baseline measures that were significantly different by gender but not in our list of selected help-seeking covariates to the models to control for any gender bias. Thus, each multivariate model (one for each sample) had its own unique set of covariates specific to the sample. Table 1 displays all candidate covariates considered for the final models (noted by a check mark [√] in the last column). Although we entered help-seeking measures as three blocks of data in the simultaneous models, only help-seeking covariates that remained significant in the last block are displayed in Table 2. Odds ratios (ORs) and 95% confidence intervals are shown for each sample.

Swedish sample. Several of the various baseline measures found significant ($p \leq .10$) in the separate regression models continued to be significantly associated with 1-year follow-up mutual-help group attendance in the final simultaneous model for one or both genders in the Swedish sample (see Table 2). For both genders, follow-up mutual-help group attendance correlated positively with having a treatment goal to stop drinking (OR = 2.0, $p < .000$), perceiving the need for treatment as extremely high (OR = 1.4. $p < .019$), getting treatment suggestions from persons in one's employment

TABLE 2. Significant individual, formal, and formal factors associated with mutual-help attendance at 1-year follow-up in multivariate regression analysis

Variable	OR	95% CI
Swedish sample		
Both genders		
Goal to stop drinking completely vs. else	1.96	[1.45, 2.65]***
Perceived need for treatment extreme vs. else	1.44	[1.06, 1.96]*
Both alcohol and drug dependent vs. else	2.44	[1.57, 3.80]***
Employment suggested treatment vs. not	2.08	[1.39, 3.10]***
Attended mutual help, lifetime vs. not	2.62	[2.00, 3.81]***
Females only		
Live with nonadult children vs. not	2.37	[1.31, 4.28]*
No. of supportive friends	1.14	[1.03, 1.26]**
Males only		
Legal system suggested treatment	1.77	[1.05, 2.90]*
U.S. sample		
Both genders		
Goal to stop drinking completely vs. else	2.34	[1.47, 3.72]***
Perceived need for treatment extreme vs. else	2.11	[1.37, 3.24]**
Went to formal treatment, lifetime vs. not	1.63	[1.02, 2.61]*
Employment suggested treatment vs. not	4.58	[1.36, 15.4]*
Attended mutual help, lifetime vs. not	3.38	[1.84, 6.20]***
ASI psychiatric severity	0.33	[0.12, 0.86]*
Live with nonadult children vs. not	0.61	[0.38, 0.97]*
Females only		
Both alcohol and drug dependent vs. else	3.79	[1.31, 10.9]*
No. of supportive friends	1.13	[1.01, 1.27]*

Notes: Only significant findings are shown above for the final multivariate logistic regression models in the two samples. Final multivariate models included the following measures. Swedish sample: (Block 1) gender, lives with children, Gender × Lives With Children, drinking goal, perceived treatment need, both alcohol and drug dependent, Gender × Both Alcohol Dependent, Addiction Severity Index (ASI) psychiatric severity; (Block 2) prior treatment, Gender × Prior Treatment, employment suggestions, legal suggestions, Gender × Legal Suggestions; (Block 3) lifetime mutual help, no. of supportive friends, Gender × No. of Supportive Friends, family/friend suggestions, Gender × Family/Friend Suggestions. Education and ASI family severity, medical severity and legal severity were added to the model to adjust for baseline gender differences. U.S. sample: (Block 1) gender, lives with children, drinking goal, treatment need, both alcohol and drug dependent, Gender × Both Alcohol and Drug Dependent, ASI psychiatric severity; (Block 2) lifetime treatment, employment suggestions, service suggestions, Gender × Service Suggestions; (Block 3) no. of supportive friends, Gender × No. of Supportive Friends, family/friend suggestions, lifetime mutual help. Marital status and ASI family severity and legal severity were added to the model to adjust for baseline gender differences. OR = odds ratio.
*$p < .05$; **$p < .01$; ***$p < .001$.

environment (OR = 2.1, $p < .000$), being dependent on both alcohol and drugs (OR = 2.4, $p < .000$), and ever attending a mutual-help group (OR = 2.6, $p < .000$). Differences emerged by gender. For women, living with nonadult children (OR = 2.4, $p = .04$) and having more close persons to talk with (OR = 1.1, $p = .007$) predicted attendance. For men, getting treatment suggestions from the legal system (OR = 1.8, $p = .03$) predicted attendance. Just more than 20% of the variance was explained in the final model (Nagelkerke pseudo-R^2 approximation = .220), with most of the estimated variance coming from individual factors estimated in the first block (Nagelkerke $R^2 = .132$).

U.S. sample. As with the Swedish sample, several measures in the simultaneous-entry model continued to be positively associated with mutual-help group attendance at the 1-year follow-up for one or both genders in the U.S. sample (Table 2). For both men and women, these included having a drinking goal to stop completely (OR = 2.3, $p < .000$); perceiving the need for treatment as extremely high (OR = 2.1, $p = .001$); getting treatment suggestions from one's boss or a fellow employee (OR = 4.6, $p = .014$); ever attending mutual-help groups (OR = 3.3, $p < .000$); and having lower psychiatric severity (OR = 0.3, $p = .024$). For women, but not for men, the odds of follow-up attendance increased for those who were both alcohol and drug dependent (OR = 3.8, $p = .014$). In addition, the odds of attendance increased by 13% for each additional person a woman had in her social network to talk with (OR = 1.1, $p = .039$). Twenty-seven percent of the estimated variance was explained in the final model (Nagelkerke $R^2 = .272$). As with the Swedish

sample, most of the estimated variance came from individual factors (Nagelkerke R^2 = .163).

Post hoc analyses

Although mutual-help groups in both countries (AA, NA, or CA; the Swedish Links; and other groups, such as Women for Sobriety, Secular Organizations for Sobriety, and Rational Recovery) view abstinence as the desired goal for the alcoholic or addict (Mäkelä et al., 1996, p. 215), we were nonetheless interested in the types and mix of groups that clients attended. Unfortunately, this level of information was not available for the Swedish sample (although AA and the Swedish Links are the predominant mutual-help groups). For the U.S. sample, however, we found that, among the 72% who attended mutual-help groups in the year following treatment, 51% attended only AA groups, 7% attended only NA/CA groups, 2% attended only other "unspecified" groups, and 40% attended a combination of these groups.

Discussion

Rates of mutual-help group attendance

A primary aim of this research was to compare men and women in representative treatment samples from studies with parallel study designs, one conducted in Sweden and the other in the United States, to explore whether rates and correlates of mutual-help attendance following treatment differed by gender, both within and between countries. Thus, we can see that the mutual-help group movement appears to have had stronger influence on U.S. men and women than Swedish men and women. This is most evident in the higher rates of mutual-help group attendance for U.S. clients, both before their current treatment episode (nearly 1.5 times greater than the Swedish sample) and following treatment (>2 times greater). Regarding gender, rates of attendance were very similar for men and women within the respective samples.

Clients at treatment initiation

Before drawing any conclusions on associations between help-seeking factors and mutual-help group attendance in the posttreatment period, and considering gender, we first need to discuss how different these two samples were at treatment initiation. To provide a contextual framework for summarizing our findings, a good deal of our introduction covered the historical underpinnings of mutual-help groups and alcohol and drug treatment systems in the two countries. Unanticipated sample differences at treatment initiation add another layer of information to possible conclusions. Table 1 provides us with a good picture of these differences. Relative to Swedish treatment clients, U.S. treatment clients were younger, more were married/cohabitating, more had nonadult children living with them, and fewer had less than a high school/gymnasium education. In terms of problem severity, U.S. clients reported higher rates of drug dependence (>30% greater), and they reported noticeably higher severity ratings on ASI family/social, legal, and psychiatric indices. Accordingly, U.S. clients also perceived their need for treatment to be higher than Swedish clients. More information is required to explain why the U.S. sample, although somewhat younger and with seemingly better social supports (e.g., more educated, more married/cohabitating), reported greater problem severity in more life areas than the Swedish clients.

The prevalence, patterns, and types of substances used may account for some differences in the two countries. Drug problem indicators were higher in the U.S. sample where, compared with the Swedish clients, ASI alcohol and drug scores were greater and more than twice as many clients were dependent on both alcohol and drugs (although the gender patterns were reversed). Although not directly available from these data, the dual use of alcohol and drugs may have contributed to greater problem severity at a younger age for U.S. clients. Or, perhaps the higher legal and psychiatric severities among U.S. clients are reflections of lower accessibility to social-welfare allowances in the United States, compared with Sweden.

As for similarities, nearly two-thirds of the clients in both samples had received suggestions to seek treatment from family members, friends, and other acquaintances. A striking difference, however, was the finding that Swedish clients received suggestions to seek treatment for their current episode from persons in the medical, social, and psychiatric services sector by a factor of three times that of the U.S. clients—again, perhaps the result of a more integrated public system for social and health service provision in Sweden than in the United States. The most salient similarities between the samples related to gender. In both samples, women were more likely than men to be in a marriage-like relationship, and they were more likely to be living with nonadult children. (Although these gender differences were similar for both countries, the U.S. rates were about twice the Swedish rates.) Moreover, at treatment initiation, Swedish and U.S. women reported greater ASI psychiatric, family/social, and medical severity. Men in both samples reported higher ASI legal severity.

Although women are often underrepresented in treatment research (Emrick et al., 1993), outcomes research shows that they are more likely than men to enter treatment with more severe problems, including greater psychological distress and greater marital and family instability, and that men are more likely to enter treatment involuntarily through confrontations, especially with legal authorities (Beckman, 1993; Green, 2006). Overall, our findings are consistent with this and other research that has shown severity and measures of coercion and motivation, such as workplace pressures and

the clients' perception of treatment need, to be predictive of treatment initiation (Weisner et al., 2001).

Correlates of mutual-help group attendance

Moving to correlates of mutual-help attendance, abstinence as a treatment goal, perceived need for treatment, suggestions from persons in one's employment setting, and prior mutual-help attendance all related to meeting attendance following treatment for both genders in the Swedish sample. We have one other Swedish study to use as a comparison (Bodin, 2006). This study looked at follow-up AA affiliation (meeting attendance plus AA activities) among clients recruited from a private inpatient treatment program that required attendance at a minimum of one AA or NA meeting as part of aftercare. Similar to our results, two measures were significantly associated with AA affiliation for both genders at the 1-year interview. These were pretreatment exposures to AA and abstinence as a treatment goal. Further analysis is required with the Swedish sample to see if treatment type (e.g., Minnesota Model treatment) correlates with mutual-help group attendance. Moreover, persons with greater problem severity may be more likely to attend residential programs and attend mutual-help groups.

Many help-seeking factors predictive of attendance in the Swedish sample were also predictive in the U.S. sample. However, a single gender finding emerged for women in both samples; that is, having a network of trusted friends to talk to about personal problems was associated with attendance. Given our findings, caregivers may want to offer more encouragement to women with weak social networks to become engaged in a mutual-help fellowship while in treatment. A recent U.S. randomized clinical did just this and found that clients linked to 12-step volunteers, in addtion to receiving a schedule for local 12-step meetings and being encouraged to attend (usual care), not only improved 12-step group attendance but also improved substance-use outcomes (Timko and Debenedetti, 2007).

For both samples, having an abstinence goal, an extreme perceived need for treatment, prior mutual-help attendance, and employment suggestions predicted follow-up attendance. One clear difference emerged. Although the abstinence drinking goal predicted attendance in both samples, a majority of men and women in the U.S. sample set a drinking goal to stop completely, whereas the majority of Swedish clients set a drinking goal to something other than stopping altogether. This difference may be evidence of a greater integration of 12-step ideologies in most treatment programs in the United States (public and private). Even Therapeutic Community model programs, which serve as the third most dominate treatment philosophy in the United States and the predominant mode of residential therapy for drug dependence (De Leon, 2000), have grown to include 12-step oriented groups (Troyer et al., 1995). In contrast, the advent of institutional 12-step treatment began in Sweden in the mid-1980s when Minnesota-type programs first opened as small private programs. The 12-step ideology, although part of Minnesota Model programs, appears to be less integrated into the Swedish treatment system as a whole than in the U.S. treatment culture. Moreover, the steady rise in AA membership began earlier in the United States than in Sweden. It may also be the case that Swedish clients are identified and brought into the system of care at an earlier stage in their problem use than U.S. clients (as evidenced by lower severity in this sample overall and higher suggestions from service providers to get treatment) and can return to nonproblematic low-risk drinking, as indicated by some U.S. research (Dawson et al., 2006, 2007).

An emerging literature suggests that the natural course of substance dependence includes recurrent cycles of relapse and recovery, and indicates that multiple episodes of care over several years are the norm (Dennis et al., 2005). In our two samples, more than two thirds of the clients had sought treatment before their current treatment episode, and about two thirds had attended mutual-help groups at some point in their lifetime. If substance-use disorders are to be evaluated and treated like other chronic illnesses, as suggested by other studies—with extended interventions that vary in intensity across time to match changes in symptoms and other idiosyncratic factors (McKay, 2005; McLellan et al., 2000)—mutual-help groups seem to have a functional place within a full continuum of care (Humphreys and Moos, 2007; Kelly et al., 2006). In any culture, AA may provide an accessible means to obtain continuous (or intermittent) help in conjunction with (or without) specialized alcohol and drug treatment.

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